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# Magnetic fields of weak-line T Tauri stars

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## Abstract

T-Tauri stars (TTS) are late-type pre-main-sequence (PMS) stars that are gravitationally contracting towards the MS. Those that are accreting from a massive disk are known as classical T-Tauri stars (cTTSs), and those that have exhausted the gas in their inner discs are known as weak-line T-Tauri stars (wTTSs). Magnetic fields largely dictate the angular momentum evolution of TTS and can affect the formation and migration of planets. Thus, characterizing their magnetic fields is critical for testing and developing stellar dynamo models, and trialling scenarios currently invoked to explain low-mass star and planet formation. The MaTYSSE programme (Magnetic Topologies of Young Stars and the Survival of close-in Exoplanets) aims to determine the magnetic topologies of  $\sim 30$  wTTSs and monitor the long-term topology variability of  $\sim 5$  cTTSs. We present several wTTSs that have been magnetically mapped thus far (using Zeeman Doppler Imaging), where we find a much wider range of field topologies compared to cTTSs and MS dwarfs with similar internal structures.

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